

WISE

WONDER

INVESTIGATE

SYNTHESIZE

EXPRESS



Inquiry Model Teacher's Guide

This curriculum was developed to serve as a guide for teachers stepping into Inquiry or collaborative research models for the 21st Century learner. This is a simple model to enrich the student's learning experience and support academic success. Inquiry is not a "clean" fill-in-the-blank research model where students search for facts a teacher-leader has predefined, but inquiry places the student in charge of his learning direction. Inquiry fosters student ownership of the process and student pride in the product. This works.

In a well-defined Inquiry unit, the teacher serves as a learning concierge and academic guide ensuring that learning goals are met and content vocabulary is understood. Inquiry is an authentic way of learning which is driven by questioning, thoughtful investigation, synthesizing information, and developing new understandings. This is characterized by student-centered exploration, engagement, social interaction, communication, and performance based assessment.

WISE Inquiry

WONDER

INVESTIGATE
information

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Wisdom For Teachers

WE BELIEVE...

- **START** with compelling content
- Develop **BACKGROUND KNOWLEDGE**
- Connect to the learner's **REAL WORLD**
- Build on quality **QUESTIONS**
 - Essential questions
 - Guiding questions
 - Student questions
- Authentic learners need **CHOICES**
- Authentic learners have **VOICES**
- **THINKING** is fundamental
- **ENGAGED** learners care and count
- **CHALLENGE** leads to depth of understanding
- **SOCIAL INTERACTION** boosts success
- **COMMUNICATION** and sharing build learning communities
- **NEW KNOWLEDGE** is the goal
- Wise learners **REFLECT** and **EVALUATE**
- Wise teachers **ASSESS** and provide ongoing feedback

**"Inquiry
gives me
wings."**

-Taylor,
4th grade,
Karigon
Elementary

WONDER

Indicators for a 21st Century elementary learner:

- Shares what he/she knows about topic, problem or concept
- Explores and connects ideas to his/her world
- Acquires background information
- Identifies key terms related to the topic
- Identifies key concepts related to the topic
- Asks clarifying questions
- Makes connections to the “big picture”
- Develops awareness of expectations/criteria components of final product
- Identifies purpose for using information
- Asks/creates questions about the topic with guidance
- Uses key concepts/terms to guide inquiry
- Brainstorms key words and synonyms for the intended topic
- Brainstorms possible sources of information
- Identifies intended audience

Teacher Tools

- Read-in
- Video or videoclip
- Jackdaw (primary source materials)
- Photographs
- Internet tour, field trip
- Word Wall
- Speaker/demonstration
- ABC Power Point
- Teacher's Trunk
- Immersion in multiple sources of information
- Envisioning guide
- Electronic picture book
- KWL with emphasis on K
- Videoconference Brainstorming (chart paper, Inspiration)
- Generate questions, question web
- Concept mapping
- Webbing
- Anticipation guide

Wonder Assessment Tools

- KWL Charts
- Graphic organizers
- Think/Pair/Share
- One minute writing tasks
- Learning logs
- Observation log
- I Notice, I Know, I Wonder
- Facilitated conversation

Wonder BIG Ideas!

Activate
thinking

•

Generate
curiosity

•

Build
background
information

•

Tap prior
knowledge

•

Frame quality
questions for
investigation

Research Says...

- Children come to school naturally curious but lose curiosity in content coverage models.
- Encouraging students to form their own questions has a positive impact on learning.
- Students are likely to face the task of creating questions with uncertainty.
- Questions requiring low-level thinking encourage copying and regurgitating answers.
- Engaging students with quality questions is a strong indicator of success for the learner.
- Connecting new learning with background knowledge, prior knowledge and experience, and vocabulary will result in improved performance.
- CHOICES and student-directed process engage and motivate learners.
- Metacognition, or modeling thought, will help teach students how to think.



INVESTIGATE INFORMATION

Indicators for a 21st Century elementary learner:

Find

- Understands and uses information environments (i.e. libraries, computers, people, etc.)
- Creates a list of search/keywords related to topic
- Locates resources in different formats for individual level of understanding
- Uses library catalogs and appropriate search engines, online databases, internet search tools for finding information
- Connects personal knowledge and information from a variety of sources, genres, points of view, and formats to construct the “big picture”

Think

- Uses print or digital sources with increasing confidence
- Uses reading and thinking strategies to build meaning
- Distinguishes between fact and opinion
- Selects and records appropriate information in an effective note-taking process
- Takes notes using student's own words
- Recognizes conflicting facts, opposing ideas, and gaps in information
- Identifies main idea and supporting details
- Works collaboratively in a group
- Writes, draws or verbalizes the main idea

Review

- Evaluates sources to be CAR: Credible, Accurate, Reliable
- Reviews and refocuses as necessary
- Uses information and technology ethically and responsibly
- Checks progress to generate conclusions, connections and new ideas

Investigate BIG Ideas!

Construct meaning from text

Use facts to build big ideas

Manage search process

Record information using own words

Determine relationship between ideas

Teacher Tools

- Talk to your librarian
- Use pathfinders
- Create a search strategy
- Skim and scan
- Read for information
- Brainstorm where and how to find information
- Gather information
- Take notes using graphic organizers

Investigate Assessment Tools

- Checklists
- Process rubrics
- Semantic maps
- Plan development organizer
- Brainstorming webs
- Graphic organizers
- T-charts
- Inference sharing
- Evaluating resources, ideas
- Marginal notes
- Draw pictures
- Response journals
- Two column note taking:
 - Notes/Reflections
 - Main ideas/Details, Examples
 - Ideas from text/Connections to prior knowledge
- Writing questions about text
- Writing new questions after reading
- Learning logs
- Exit cards
- Observation checklists
- Conferencing
- Peer evaluation

Research Says...

- Children are resourceful in easy searches, but lack the skills to formulate search strategies.
- Children need content knowledge before they can develop search terminology.
- Children need direct instruction to develop search skills and evaluative thinking.
- The level of search complexity can be changed as children mature.



SYNTHESIZE

Indicators for a 21st Century elementary learner:

- Organizes and communicates main and supporting ideas
- Offers examples, data and details to support ideas
- Connects and compares ideas from various sources
- Connects information with prior knowledge
- Describes/explains relationships among ideas
- Resolves any conflicting information, opposing ideas and/or gaps in information
- Gathers additional information as needed
- Demonstrates understanding of new knowledge, supported by evidence

Teacher Tools

- Planning presentation
- Review assessment criteria, rubric
- Cooperative learning
- Model quality products
- Organize notes
- Create an outline
- Draft, assess, revise
- Conferencing and questioning (teacher-to-student, student-to-teacher, and student-to-student)
- Compare new ideas to prior ideas, compare evidence to hypothesis

Synthesize Assessment Tools

- Chart concepts, relationships among ideas
- Use of evidence from text to support inferences
- Use of vocabulary from the content
- Quick writes or directed writing
- New questions
- Process checklists/rubrics
- Product checklists/rubrics



Synthesize BIG Ideas!

Using facts to build meaning

Connecting ideas

Determining relationships between ideas

Drawing conclusions

Differentiating important or central ideas

Using the vocabulary of the content knowingly

Designing and creating a product that conveys new understanding

Research Says...

- Children are naturally predisposed to thinking and creating abilities.
- Teaching of summarization skills contributes to success in drawing original conclusions.
- Creativity can be reawakened in children through teaching strategies and inquiry process.
- Children need to own their own content.
- Thinking can be enhanced by concept maps of various kinds as learners encounter important ideas. Comparing, contrasting, judging and testing ideas across information sources leads to understanding relationships between ideas.
- Learners construct meaning from text using information literacy skills

EXPRESS

Indicators for a 21st Century elementary learner:

- Shows understanding of material
- Understands differences/benefits of presentation formats
- Uses elements of standard citations
- Includes writing process to develop expression of new understanding
- Begins/develops understanding of critique process
- Uses feedback to improve presentation
- Rehearses and practices presentation

Teacher Tools

- Rehearses
- Embeds choice of presentation formats
- Uses feedback to edit
- Videotapes, critiques
- Shares, presents, engages critical questions

Express Assessment Tools

- Presentation rubric with specific criteria
- Writing process tools for revision, edit
- Literate conversations
- Student collaborations to assess arguments or conclusions
- Question development for further research

Research Says...

- Communicating has intrinsic benefits for learners.
- These benefits include increased confidence, the discovery of “voice,” new experience, and improved competence.
- Sharing original products in a climate of critical engagement boosts motivation and concern regarding quality of work.
- Students who learn to communicate in a variety of media and technological platforms learn the tool skills of production in that media.

EXPRESS BIG Ideas!

Communicate
new knowledge

Use appropriate
format for
audience

Critical
engagement
of audience

Self-assess
and revise
product based
on feedback

Communicate
clearly main
and supporting
points

Encourage
student
freedom of
expression
through many
modalities and
technologies

Encourage
creativity



Roadmap for Planning for a Collaborative Research Unit Information Infused Investigation



Librarian
and
classroom
teacher do
the work

1. **Begin with the end in mind:** (backward design, Wiggins & McTighe)
Collaborate with teachers in planning, if possible.
 - What do you want your students to know (or be able to do) when they are finished?
 - What is the core content?
 - What is (are) the Common Core learning standard(s) I want to hit?
 - What information literacy skills will you focus on during this unit?
 - AASL 21st Century Standards
 - ISTE Standards (if your school has embraced these)
2. **Identify Essential Content Vocabulary**
Teacher provides the vocabulary needed for assessment, useful for research, and expected to be seen (or heard) in the students' knowledge product(s).
3. **Teacher "sets the stage"**
 - How will I introduce this project?
 - What background knowledge do students need?
 - Do I need to pre-teach essential background? Skills?
4. **Develop the Investigation "big question" for the project to inspire student learning/interest.**
5. **Plan & deliver pre-assessment strategies:**
 - Classroom teacher's content
 - Librarian pre-assessment of IL skills
 - Librarian identifies:
 - IL skills needed
 - EQ's for instruction
 - Resources potential

Students
do the
work

6. **Students Generate research questions.**
 - Activate thinking
 - Imbed meaning
 - Connect to student's world
7. **Research ... investigation**
 - What resources will students use?
 - Websites, books, databases, etc.
8. **What is the final (knowledge) project?**

Teachers
and
students

9. **How will I assess student learning?**
10. **Reflect on the process when the unit is complete**
 - What will I do differently next time?

Goal: Higher Level **THINKING, PRODUCTS, QUESTIONS**

LEVEL	VERBS	PRODUCTS	QUESTIONS
Synthesizing	build, create, design, develop, devise, generate, hypothesize, invent, propose, theorize, compose, construct, invent, improve, adapt, imagine, formulate	a model program to address social issue; inventing a new animal; creating a new country; designing a building, machine, process, experiment; developing legislation; devising an ethical code, a way to test a new concept or theory; creating a play, a song, a movie	What if? Why? How? Should? So what?
Transforming	blend, build, combine, compile, conclude, compose, convince, decide, dramatize, express, forecast, imagine, modify, revise	ad campaign, a board game, a poem or short story, a play, dialog, speech, role play, news show, historical newspaper, web page	What is your: conclusion? connection? prediction?
Challenging	appraise, argue, assess, criticize, compare, debate, defend, judge, justify, rank, prioritize, refute, review, support, value, weigh, verify, recommend	critical review, argue as an attorney, determine the worth of a project, defend a judgment, debate issues, evaluate information, investigate a problem, justify a rank	Which is better? How would you rate? Refute? What evidence supports?
Analyzing	analyze, apply, associate, break down, differentiate, change, compare, contrast, distinguish, examine, infer, experiment, relate, select, map, sift, solve	create a timeline or flowchart & correlate events, transplant an event or person, write an obituary or review, letter to the editor, rewrite w/ new perspective, graphic	Why do you think? What justifies? How is this related? How can you distinguish?
Explaining	cite, complete, describe, document, explain, expand, give examples, illustrate, restate, paraphrase, generalize, show, solve, use, portray	dramatize, illustrate, present a news show, fictional diary or narrative, resume for a person researched, explorer's log, journal, guided tour	What? Who? Where? When? What is different, the same?
Recalling	arrange, cluster, find, identify, label, list, locate, match, name, recall, reproduce, select, state, recount	select or list, find facts, select pictures, state questions of a reporter, arrange words, define words, write a letter recounting, chart facts, make a timeline	Who? What? Where? When?

Based on the REACTS Taxonomy by Barbara Stripling and Judy Pitts and Bloom's Taxonomy

Summary By Mary Ratzer

What's the moral of the story?

Finding the perfect question that will drive student investigation and learning is difficult.

The more you brainstorm, the better you become at framing a question which will compel deep learning, foster student ownership, and meet learning objectives.

Listed below are a few precepts.



Essential questions:

- Are arguable and important
- Are at the heart of the subject
- Often start with HOW? WHY? WHICH? WHAT IF? SHOULD? SO WHAT?
- Recur in school and in life
- Raise more questions
- Often raise important issues
- Can provide a purpose for learning
- Require meaning beyond understanding and studying, some kind of resolve or action, making a choice or forming a decision
- Cannot be answered by a few words, yes or no
- Probably shift and evolve
- May be unanswerable
- Will serve a unifying core for plan

ESSENTIAL QUESTION:

SAMPLES:

- How were the 1930's and 40's a period of forced change?
- How has racism affected the culture and history of the United States?
- How has the United States changed because of the Age of Exploration?
- What if we lost World War II?
- How should bioethics guide emerging scientific technology?
- How does conflict cause literary characters to grow?
- How can literature inspire us to face adversity?
- How did European contact challenge Native peoples of New York?
- Why has the Hudson River written the history of Eastern New York?
- What do living things need to survive?
- How has the earth changed over time?

KNOWLEDGE product design



Students should have a platform to communicate:

- Ideas
- Arguments
- Their own synthesis and conclusions

Students should have an opportunity to demonstrate their expertise:

- By using core content vocabulary in knowledge product
- By discussing relationships in ideas, connections
- Answering questions central to the issue
- Citing rich information sources
- Demonstrating rigor vs. rote

Knowledge products:

- Showcases the students' analysis and synthesis
- Demonstrate personal understanding
- Encourages transfer and sharing of conclusions

KNOWLEDGE product:

Avoid Information Products which have these characteristics:

- Knowledge remains on a factual level
- Squirreling, stockpiling
- Easiest part of the search process is access
- Information seeking merely collecting facts
- Information overload
- Student is relieved when project complete
- Low levels of interest and engagement
- Bureaucratically completing tasks (A. Zamuda)
- Missing “meaning”
- Partial or insufficient background knowledge
- No connection to life or prior learning
- Little evaluation
- Missing relevant documents

INQUIRY EVIDENCE:



How will we ACTIVATE and sustain thinking?

How will we build background and integrate prior knowledge?

How will we ENGAGE the learner? Activate thinking?

How will we make our plan STUDENT CENTERED?

How will we reach the goal of deep understanding and content mastery?

How are we using formative assessment to boost performance?

How will we achieve MEANINGFUL learning?

How will we share our products with meaningful audiences?



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Prepared with students in mind
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Inquiry

Building
minds
to meet
tomorrow's
challenges

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